IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Raymond Kurzweil	Art Unit	: 3661
Serial No.	: 10/734,616	Examiner	: Christine M. Behncke
Filed	: December 12, 2003	Conf. No.	: 1709
Title	: VIRTUAL ENCOUNTERS		

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APPEAL BRIEF ON BEHALF OF RAYMOND KURZWEIL

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(i.) Real Party In Interest

The real party in interest in the above application is Kurzweil Technologies, Inc.

(ii.) Related Appeals and Interferences

The Appellant is not aware of any appeals or interferences related to the above-identified patent application. However, Appellant informs the Board that Appellant has a pending appeal in Serial No. 10/734,617, which is not yet docketed.

(iii.) Status of Claims

This is an appeal from the decision of the Primary Examiner in an Office Action dated May 15, 2009, finally rejecting claims 1-21, all of the claims in the application. The claims have been twice rejected.

Claims 1-21 are the subject of this appeal.

(iv.) Status of Amendments

Appellant did not file a Reply to the Final Office Action. All previously filed amendments have been entered. A Notice of Appeal is being filed herewith.

(v.) Summary of Claimed Subject Matter

Claim 1

One aspect of Appellant's invention is set out in claim 1 as a virtual reality encounter system. "*Referring to FIG. 1, a virtual encounter system 10 includes in a first location A, a mannequin 12a, a communication gateway 16a, a set of goggles 20a worn by a user 22a, and two wireless earphones (earphone 24a and earphone 26a) also worn by user 22a. System 10 can further include in a location B, a mannequin 12b, a communication gateway 16b, a set of goggles 20b worn by a user 22b, and two wireless earphones (earphone 24b and earphone 26b)*

also worn by user 22b. Gateway 16a and gateway 16b are connected by a network 24 (e.g., the Internet)."[1]

The inventive features of claim 1 include a humanoid robot having tactile sensors positioned along the exterior of the robot, the sensors sending tactile signals to a communications network. *"Referring to FIGS. 7A and 7B ... the mannequins are replaced by robots. For example, a robot 12b includes a series of motion actuators 103."*[2] *"Referring to FIGS. 9A and 9B, in other embodiments, sensors are placed over various parts of a robot."*[3] *"Referring to FIGS. 8A and 8B, in still other embodiments, tactile sensors 104 are placed on the exterior of a robot hand 102 located in Location A. Corresponding tactile actuators 106 are sewn into an interior of a glove 104 worn by a user in location B. Using system 10, a user in location B can feel objects in Location A. For example, a user can see a vase within a room, walk over to the vase, and pick-up the vase. The tactile sensors–actuators are sensitive enough so that the user can feel the texture of the vase."*[4] *"Signals within system 10 are sent using a standard streaming connection using time-stamped packets or a stream of bits over a continuous connection."*[5]

The inventive features of claim 1 also include a body suit having tactile actuators, the actuators receiving the tactile signals from the corresponding tactile sensors on the robot from the communications network, wherein the tactile sensors and the corresponding tactile actuators are calibrated in connection with variable sensitivity associated with different regions of a human. *"Referring to FIGS. 7A and 7B, the user 22a is shown wearing motion sensors 101, over portions of their bodies..."*[6] *"Each motion actuator 103 placement corresponds to a motion sensor 101 on the user 22a so that each motion sensor activates a motion actuator in the robot that makes the corresponding movement."*[7] *"Referring to FIGS. 9A and 9B...Corresponding actuators can be sewn in the interior of a body suit that is worn by a user. The sensors and their*

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[1] Specification Page 3, Lines 17-26.
[2] Id., Page 6, Lines 13-18
[3] Id., Page 7, Lines 20-21
[4] Id., Page 7, Lines 11-19
[5] Id., Page 5, Lines 16-18
[6] Id., Page 6, Lines 13-14
[7] Id., Page 6, Lines 18-21

corresponding actuators are calibrated so that more sensitive regions of a human are calibrated with a higher degree of sensitivity."[8]

The inventive features of claim 1 also include a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit. *"[G]ateway 16a can also supplement tactile sensations with stored virtual tactile sensations. For example, a user can feel the sand on her feet in the beach scene or a cold breeze on her cheeks in a mountain top scene."*[9]

Claim 13

Claim 13 is directed to a method of having a virtual encounter. Support for this feature is found at least in the description of FIG. 1, as discussed for claim 1.

The inventive features of claim 13 include sending tactile signals to a communications network from tactile sensors coupled to a humanoid robot, the tactile sensors positioned along the exterior of the robot. Support for this feature is found at least in the description of FIGS. 7, 8, and 9 as discussed above for claim 1.

The inventive features of claim 13 also include receiving the tactile signals from the communications network at a body suit having corresponding tactile actuators, wherein the tactile sensors and the corresponding tactile actuators are calibrated in connection with variable sensitivity associated with different regions of a human. Support for this feature is found at least in the description of FIGS. 7 and 9 as discussed above for claim 1.

The inventive features of claim 13 also include generating by a gateway device supplemental tactile sensations based on stored virtual tactile sensations that are sent to the body suit. Support for this feature is found at least in the description of the gateway 16a as discussed above for claim 1.

(vi.) Grounds of Rejection to be Reviewed on Appeal

1) Claims 1-4, and 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons, US 6,741,911, in view of Mclntosh, US 5,103,404, in further view of Abovitz, US 200410034302 and in further view of Ombrellaro, US 6,726,638.

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[8] Specification Page 7, Lines 20-26
[9] Id., Page 8, Lines 14-17

2) Claims 5, 8, 9, 16 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Mclntosh, Abovitz, and Ombrellaro as applied to claims 4 and 14 above, and further in view of Simmons US 20030030397 (Simmons '397).

3) Claims 10 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Mclntosh, Abovitz, Ombrellaro and Simmons '397 as applied to claims 5 and 16 above, and further in view of Algazi, US 7,333,622.

4) Claims 11, 12, 20 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Mclntosh, Abovitz, and Ombrellaro as applied to claims 1 and 13 above, and further in view of Yee, US 6,016,385.

5) Claims 6, 7 and 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Mclntosh, Abovitz, Ombrellaro, Simmons '397 and Yee as applied to claims 5 and 16 above, and further in view of Abbasi, US 6,786,863.

(vii.) Argument

Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d. 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

In *KSR Intl. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), the Supreme Court reversed a decision by the Court of Appeal's for the Federal Circuit decision that reversed a summary judgment of obviousness on the ground that the district court had not adequately identified a motivation to combine two prior art references. The invention was a combination of a prior art repositionable gas pedal, with prior art electronic (rather than mechanical cable) gas pedal position sensing. The Court first rejected the "rigid" teaching suggestion motivation (TSM) requirement applied by the Federal Circuit, since the Court's obviousness decisions had all advocated a "flexible" and "functional" approach that cautioned against "granting a patent based on the combination of elements found in the prior art."

In *KSR* the Supreme Court even while stating that: "the Court of Appeals drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias," warned

that: "a factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."

> The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham*, 383 U. S., at 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))). Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.

With respect to the genesis of the TSM requirement, the Court noted that although "As is clear from cases such as Adams,[10] a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

> Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

[10] United States v. Adams, 383 U. S. 39, 40 (1966)

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

> Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted)."The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

Discussion

(1) Claims 1-4 and 13-15 are patentable over Simmons in view of McIntosh, in further view of Abovitz, and in further view of Ombrellaro.

Claims 1, 4 and 13

For the purposes of this appeal only, claims 1, 4 and 13 stand or fall together. Claim 1 is representative of this group of claims.

Claim 1 is directed to a virtual reality encounter system. Appellant contends that Simmons, McIntosh, Abovitz, and Ombrellaro, whether each is taken alone or in combination, neither describes nor renders obvious at least the feature of: "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1.

Simmons neither describes nor suggests at least the feature of "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit." Rather, Simmons discloses allowing a human operator to perform accurate and real-

time control over a robot at a remote site as if the operator were actually there. In this regard, Simmons states:

> **The current invention allows a human operator to perform delicate or indelicate tasks with great dexterity remotely with broad multiple and synchronized simultaneous sensory iteration as if the user were actually there. This includes the accurate, full-body interactive, real time perceptions and control of weigh, distance, inner ear balance, motion/inertia, speed, pressure, vibration, impact, resistance to action, sound and a true, position responsive visual interface as if his body were actually in the remote location.**[11]

Appellant contends that not only does Simmons teach away from this feature of claim 1, Simmons would not be capable of using this feature because Simmons requires the user to accurately perceive the visual and sensory conditions of a remote environment where the robot is operating, as opposed to providing tactile sensations in accordance with a user-defined virtual reality.

For example, Simmons elaborates on a scenario in which a surgeon controls a robot at a remote site to perform surgery on a patient:

> **In one hand the surgeon feels the texture, stiffness, slipperiness, resistance to squeezing, the pulse as the heart pumps and the weights of the heart just as he feels in the other hand the resistance and vibration of the scalpel as it makes an incision and encounters more resistance as it goes deeper. He appropriately responds to a sudden resistance with just enough additional force to over come the scalpel's resistance but not enough to puncture below or overextend the cut.**[12]

Appellant contends that any modification to Simmons to include providing tactile sensations in accordance with a user-defined virtual reality will inevitably incur a life-threatening situation and therefore Simmons cannot render obvious the feature of "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit" in combination with the other features of claim 1.

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[11] See Simmons at col. 1, lines 36-44.
[12] Id. at col. 2, lines 31-38.

McIntosh does not remedy the foregoing deficiencies of Simmons. Rather than providing tactile sensations in accordance with a user-defined virtual reality, as required by claim1, McIntosh suggests to provide accurate and reliable tactile feedback to a human operator because:

> **None of the systems are able to provide sensory input to an operator of a remote manipulator which gives in real time, an accurate and reliable, as well as variable, degree of tactile feedback to the operator to enhance the preciseness of his control is often necessary to avoid overcompensation and undue time required to achieve the desired action of the manipulator. [13]**

The examiner further contends:

> **Abovitz teaches a remote surgical apparatus and method wherein network and computer overlay tactile sensations to the haptic device of the surgeon to indicate haptic cues to indicate violation of sensitive areas ([0067]). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Simmons in view of Mcintosh with the teachings of Abovitz because, as Simmons teaches the additional tactile sensations indicate to a user boundaries or negative pressure, Abovitz similarly indicates using preset haptic sensations to convey a variety of information. [14]**

Abovitz, likewise fails to remedy the deficiencies of Simmons and McIntosh. Abovitz neither describes nor renders obvious "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1. Rather, Abovitz describes a device that sends haptic cues that describe an aspect of a mapping of an haptic object.[15] The haptic cues come from haptic objects when a user moves a haptic device around a region based upon characteristics of the region. Abovitz states:

> **The haptic cues may be provided to the user based on one or more haptic objects, for example the attractive haptic object(s) associated with the target region and/or the repulsive haptic object(s) associated with the anatomical obstacles. The repulsive haptic object(s) generate forces and/or torques that guide haptic device 113 away from poses where the virtual tool would intersect the anatomical obstacles. Preferably, the repulsive haptic cues are active when the virtual tool penetrates the repulsive haptic objects or is in proximity to the repulsive haptic objects. The attractive haptic object(s) cause the haptic device to generate forces and/or torques that**

[13] See Mclntosh at col. 2, lines 31-40.
[14] Final Office Action, Mail Date May 15, 2009, Page 4
[15] Abovitz [0031].

> **guide haptic device 113 toward poses where the virtual tool has the desired relationship with the target region.**[16]

Nowhere does Abovitz describe, much less suggest, "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1. While Appellant recognizes that haptic is related to the sense of touch Abovitz has no teachings that are relevant to this feature of claim 1.

Moreover, Appellant contends that one of ordinary skill in the art would not modify Simmons using the tactile signals ("haptic cues") described by Abovitz, as such a modification to Simmons would, as explained *supra*, inevitably incur a life-threatening situation in the combination of Simmons, McIntosh and Abovitz.

Further, assuming *arguendo* that the tactile signals described by Abovitz are stored and may be described as virtual (which Appellant does not concede), such signals are not overlaid with any other tactile signal. This later feature is completely missing from any combination of these references.

That is, no combination of Simmons, Abovitz, and McIntosh renders the overlaying of supplement tactile sensations with stored virtual tactile sensations obvious. The purported combination of Simmons, Abovitz, and McIntosh fails to describe the overlaying of tactile signals with a stored, virtual tactile signal.

The examiner further contends:

> **Ombrellaro teaches that it was well known in communication networks, in particular networks that would support remote connections, that multiple computer devices are joined by means of gateways that facilitate data transfers and conversion from various networks (column 19, lines 35-50).**[17]

Appellant concedes that gateway devices are known. However, the feature of "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit" would not be known from the combination of Simmons, Abovitz, and McIntosh with Ombrellaro. Thus, while Ombrellaro indeed teaches a gateway device, Ombrellaro fails to remedy the deficiencies of the foregoing references because as with

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[16] Abovitz, Paragraph [0067]
[17] Final Office Action, Mail Date May 15, 2009, Page 4

Simmons, Abovitz, and McIntosh, Ombrellaro fails to suggest "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit."

More particularly, Ombrellaro describes a simulator assembly for simulating the tactile response of an item.[18] Nowhere does Ombrellaro describe, much less render obvious, "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1.

Rather, Ombrellaro describes:

> **[T]he present invention, for the remote acquisition and transmission of physically derived medical data, includes three general parts: the hand control unit 100 (HCU), the patient examination module 200 (PEM), and computer software to control the acquisition, calibration, transfer, and translation of the physical data between the physician (through the HCU) and the patient (through the PEM). The present invention allows a physician to apply hand pressures to the HCU 100 that are transmitted to a remotely situated patient and applied to selected portions of the patient's body through the PEM 200. The pressure response from the patient's body is transmitted back to the physician, thereby simulating direct contact between the physician and patient.[19]**

That is, Ombrellaro is concerned with various sub-modules that work together to provide a user with tactile signals. Ombrellaro is not concerned with the overlaying of tactile signals with a stored, virtual tactile signal. Further, the combination of Ombrellaro with Simmons, Abovitz, and/or McIntosh neither describes nor renders obvious "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1.

In rejecting claim 1 over the combination of Simmons in view of McIntosh, in further view of Abovitz, and in further view of Ombrellaro, the examiner contends:

> **It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Simmons in view of McIntosh with the teachings of Abovitz because, as Simmons teaches the additional tactile sensations indicate to a user boundaries or negative pressure, Abovitz similarly indicates using preset haptic sensations to convey a variety of information…It would have been very obvious to one of ordinary skill in the communication arts to include a gateway in the communication**

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[18] Ombrellaro, Column 2, Lines 66-67
[19] Id., Column 7, Lines 33-45

> **network of the Simmons's system to facilitate and enable the computer network connection.**[20]
>
> The examiner, however, seems to be using Appellant's invention as a template through a hindsight reconstruction of Appellants' claims. Essentially, the examiner argues that it would have been obvious to provide Ombrellaro's gateway device with the ability to overlay supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit. However, the examiner has neither found that functionality in the cited prior art nor has the examiner indicated that functionality to be inherent in the references. It is only after consideration of Appellant's claims and/or specification that the examiner can make this connection. Appellant contends that this is an exercise in *ex post* reasoning, the type of impermissible hindsight reasoning cautioned against by the Court in *KSR*.

Claim 13 recites similar features and is allowable as claim 1.

Claims 2 and 14

Claim 2 further limits claim 1 and recites: "…motion sensors positioned throughout the body suit, the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point, the motion signals transmitted to the communications network…and the humanoid robot, receiving, from the communications network the signals from the motion sensors, the signals from the motion sensors causing a movement of the robot that is correlated to a movement of the body suit." The body suit recited in claim 2 has "tactile actuators…calibrated in connection with variable sensitivity associated with different regions of a human."

The Examiner contends that Simmons describes these features of claim 2.

Appellant disagrees. Appellant contends that Simmons, rather than describing "motion sensors positioned throughout the body suit, the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point, the motion signals transmitted to the communications network…and the humanoid robot, receiving, … ," describes using actuators to measure motion of a robot. That is, Simmons describes:

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[20] Final Office Action, Mail Date May 15, 2009, Page 4

> **[T]he "tendons" (the form of actuators used in this sample embodiment as seen at FIGS. 1,4, etc.) may measure and send the angle position as a measure of fractional turns of their gears (see FIG. 2).**[21]

Nowhere does Simmons describe or suggest positioning motion sensors throughout a body suit as recited in claim 2, because Simmons never mentions calibrating such actuators in connection with variable sensitivity associated with different regions of a human.

Claim 14 recites similar features as claim 2.

Claims 3 and 15

Claim 3 depends from claim 2 and further recites "…the robot includes actuators corresponding to the motion sensors, the actuators causing the robot to move."

The Examiner contends that Simmons further describes the features of claim 3. Appellant disagrees and points out that rather than teaching actuators corresponding to the motion sensors, as recited in claim 2, Simmons teaches using actuators to measure a motion of a robot. That however is not what is claimed in Appellant's claim 3.

Claim 15 recites similar features as claim 3.

(2) Claims 5, 8, 9, 16 and 18 are patentable over Simmons in view of Mclntosh, Abovitz, and Ombrellaro, and further in view of Simmons '397.

Claims 5, 8 and 16

Claim 5 depends from claim 4, and claim 8 depends from claim 5. It was shown *supra* that Simmons, Mcintosh, Abovitz, and Ombrellaro, whether each is taken alone or in combination, neither describes nor suggests "a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit," as recited in claim 1.

The examiner introduced Simmons '397 in order to cover the features of a set of goggles including a display to render the video signals received from the camera and a transducer to transduce the audio signals received from the microphone.

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[21] Simmons, Column 14, Lines 34-38

However, Simmons '397 fails to remedy the deficiencies of Simmons, Mcintosh, Abovitz, and Ombrellaro. Simmons '397, as with Simmons, teaches away from claim 1 because Simmons 397's teaching requires the user to accurately perceive the visual and sensory conditions of a remote environment where the robot is operating, as opposed to providing tactile sensations in accordance with a user-defined virtual reality[22].

Claim 16 depends from claim 14, and recites similar features as claims 5 and 8.

Claims 9 and 18

Claim 9 depends from claim 5. It was shown *supra* that Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397 whether each is taken alone or in combination, neither describes nor suggests sending audio signals to the communications network as recited in claim 5. A purported combination of Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397 accordingly neither describes nor suggests this feature of claim 9.

Claim 18 recites similar features as claim 9.

(3) Claims 10 and 19 are patentable over Simmons in view of McIntosh, Abovitz, Ombrellaro and Simmons '397 and further in view of Algazi,.

Claim 10 depends from claim 5. It was shown *supra* that Simmons, Mcintosh, Abovitz, Ombrellaro, and Simmons '397 , whether each is taken alone or in combination, neither describes nor suggests sending audio signals to the communications network as recited in claim 5.

The examiner introduced Algazi to cover the feature of the body including an ear canal and the microphone is positioned within the ear canal. However, Algazi fails to remedy the deficiencies of Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397. Algazi teaches an approach to capturing and reproducing either live or recorded three-dimensional sound.[23] That, however, is not what is recited in Appellant's claim 5. Moreover, Algazi does not describe the channels or network over which the tactile signals are being sent.

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[22] See Simmons '397 at Paragraph [0003]
[23] Algazi, Abstract

Claim 19 recites similar features as claim 10.

(4) Claims 11, 12, 20 and 21 are patentable over Simmons in view of McIntosh, Abovitz, and Ombrellaro, and further in view of Yee.

Claims 11 and 20

Claim 11 depends from claim 10. It was shown *supra* that Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397[24] whether each is taken alone or in combination neither describes nor suggests sending audio signals to the communications network, as recited in claim 10.

The examiner introduced Yee to cover the feature of the set of goggles comprising a receiver to receive the video signals. However, Yee fails to remedy the deficiencies of Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397. Appellant contends that Yee teaches a robot system wherein an operator in a control center responds with natural movements to stimulus signals from the robot environment by issuing commands that control the robot.[25] That, however, is not what is recited in Appellant's claim 11, because Yee does not describe the channels or network the tactile signals are being sent.

Further, the examiner failed to include Algazi in the rejection of claim 11. Recall that the examiner used Algazi to cover the feature of claim 10, from which claim 11 depends. The combination of Simmons, McIntosh, Abovitz, Ombrellaro, Yee, and Simmons '397, whether or not Algazi is considered, neither describe nor suggest the features of claim 11.

Claim 20 recites similar features as claim 11.

Claims 12 and 21

Claim 12 depends from claim 5. It was shown *supra* that Simmons, Mcintosh, Abovitz, Ombrellaro, and Simmons '397, whether each is taken alone or in combination, neither describes nor suggests sending audio signals to the communications network as recited in claim 10. The examiner introduced Yee to cover the feature of the robot comprising a transmitter to wirelessly

[24] The examiner did not explicitly include Simmons '397 in the rejection, but used Simmons '397 in the argument for rejection.
[25] Yee, Abstract

send the audio signals, tactile signals, motion signals and the video signals to the communications network.

However, Yee fails to remedy the deficiencies of Simmons, Mcintosh, Abovitz, Ombrellaro, and Simmons '397. Yee teaches a robot system wherein an operator in a control center responds with natural movements to stimulus signals from the robot environment by issuing commands that control the robot.[26] That, is not what is recited in Appellant's claim 12. Yee does not describe a transmitter to wirelessly send the … tactile signals … to the communications network.

Claim 21 recites similar features as claim 12.

(5) Claims 6, 7 and 17 are patentable over Simmons in view of McIntosh, Abovitz, Ombrellaro, Simmons '397 and Yee, and further in view of Abbasi.

Claims 6 and 17

Claim 6 depends from claim 5. It was shown *supra* that Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397 whether each is taken alone or in combination, neither describes nor suggests the features of their respective independent claims.

The examiner introduced Abbasi to cover the feature of a second humanoid robot in the second location, the second robot having a second microphone and a second camera; and a second set of goggles to receive the video signals from the first camera and a second earphone to receive the audio signals from the first microphone, as recited in claim 6.

While, Abbasi fails to remedy the deficiencies of Simmons, McIntosh, Abovitz, Ombrellaro, and Simmons '397 and thus claims 6 and 17 are allowable, Appellant contends that in Abbasi, the surrogates at different sites are not integrated with microphones and cameras, as called for in claims 6 and 7. The examiner states, Abbasi's surrogate adds a capacity to engage in all types of physical contact. As illustrated in Figure 5 (reproduced below), Abbasi collects video and audio information separately from the surrogate 160.

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[26] Yee, Abstract

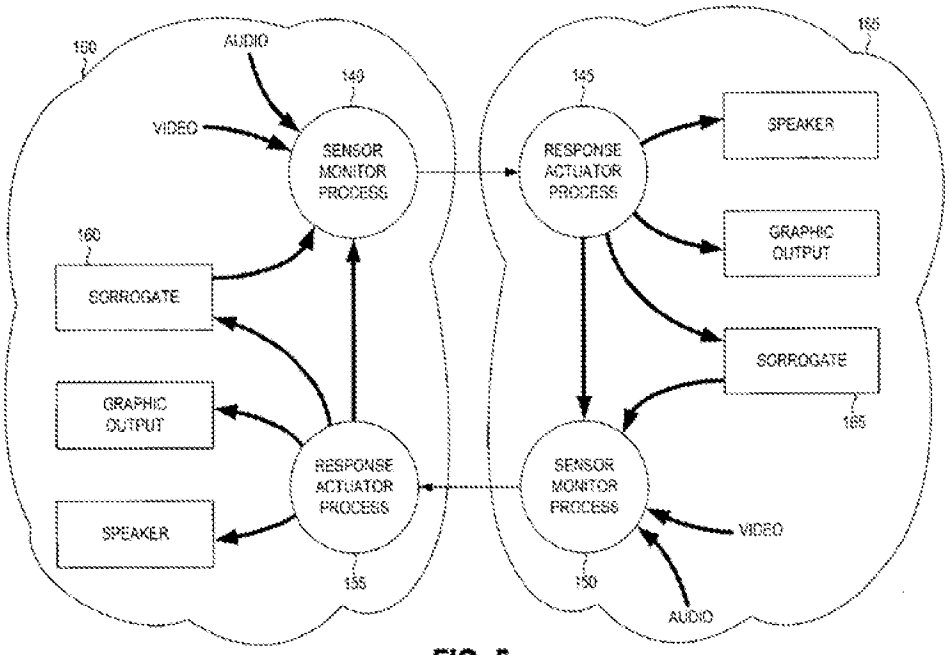

FIG. 5

Abbasi neither describes or suggests: "a second humanoid robot in the second location, the second robot having a second microphone and a second camera; and a second set of goggles to receive the video signals from the first camera and a second earphone to receive the audio signals from the first microphone." Applicant submits the examiner's "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in as well as a change in the basic principle under which the construction was designed to operate." *In re Ratti*, 270 F.2d at 813, 123 USPQ at 352 (CCPA 1959).

Claim 17 recites similar features as claim 6.

Claim 7

Claim 7 depends from claim 6. The purported combination of Simmons, Mcintosh, Abovitz, Ombrellaro, Abbasi, and Simmons '397 neither describes nor suggests the features recited in claim 6 and therefore claim 7.

Conclusion

Appellant submits, therefore, that Claims 1-21 are allowable over the cited art. Therefore, the Examiner erred in rejecting Appellant's claims and should be reversed.

Respectfully submitted,

Date: June 23, 2009

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Appendix of Claims

1. A virtual reality encounter system comprising,

a humanoid robot having tactile sensors positioned along the exterior of the robot, the sensors sending tactile signals to a communications network; and

a body suit having tactile actuators, the actuators receiving the tactile signals from the corresponding tactile sensors on the robot from the communications network, wherein the tactile sensors and the corresponding tactile actuators are calibrated in connection with variable sensitivity associated with different regions of a human; and

a gateway device that overlays supplement tactile sensations with stored virtual tactile sensations that are sent to the body suit.

2. The system of claim 1, further comprising:

motion sensors positioned throughout the body suit, the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point, the motion signals transmitted to the communications network; and

the humanoid robot, receiving, from the communications network the signals from the motion sensors, the signals from the motion sensors causing a movement of the robot that is correlated to a movement of the body suit.

3. The system of claim 2, wherein the robot includes actuators corresponding to the motion sensors, the actuators causing the robot to move.

4. The system of claim 1, wherein the robot has life-like features, the robot comprises:

a body;

a camera coupled to the body, the camera for sending video signals to the communications network; and

a microphone coupled to the body, the microphone for sending audio signals to the communications network.

5. The system of claim 4, further comprising:

a set of goggles including a display to render the video signals received from the camera and a transducer to transduce the audio signals received from the microphone.

6. The system of claim 5, the robot is at a first location and the set of goggles is at a second location the system further comprising:

a second humanoid robot in the second location, the second robot having a second microphone and a second camera; and

a second set of goggles to receive the video signals from the first camera and a second earphone to receive the audio signals from the first microphone.

7. The system of claim 6, wherein the communications gateway is a a first communication gateway in the first location; and the system further comprises:

a second communication gateway in the second location, the second processor connected to the first processor via a network.

8. The system of claim 5, wherein the communications gateway comprises an interface having one or more channels for:

receiving the audio signals from the microphone;

receiving the video signals from the camera;

sending the video signals to the set of goggles; and

sending the audio signals to the transducer.

9. The system of claim 5, wherein the body includes an eye socket and the camera is positioned in the eye socket.

10. The system of claim 5, wherein the body includes an ear canal and the microphone is positioned within the ear canal.

11. The system of claim 10, wherein the set of goggles, comprises a receiver to receive the video signals.

12. The system of claim 5, wherein the robot comprises a transmitter to wirelessly send the audio signals, tactile signals, motion signals and the video signals to the communications network.

13. A method of having a virtual encounter, comprising:

sending tactile signals to a communications network from tactile sensors coupled to a humanoid robot, the tactile sensors positioned along the exterior of the robot; and

receiving the tactile signals from the communications network at a body suit having corresponding tactile actuators, wherein the tactile sensors and the corresponding tactile actuators are calibrated in connection with variable sensitivity associated with different regions of a human;

generating by a gateway device supplemental tactile sensations based on stored virtual tactile sensations that are sent to the body suit.

14. The method of claim 13, further comprising:

sending motion signals from motion sensors positioned throughout the surface of a human, the motion signals corresponding to movements of each sensor relative to a reference point, the motion signals being transmitted to a communications network;

receiving, at the humanoid robot, the motion signals sent by the motion sensors; and

causing a movement of the robot that is correlated to a movement of the human based on the motion signals received from the motion sensors.

15. The method of claim 14, wherein receiving comprises receiving motion signals from the motion sensors at corresponding motion actuators coupled to the robot, causing a movement comprises the motion actuators causing the robot to move.

16. The method of claim 14, further comprising:

sending audio signals over the communications network, the audio signals being produced from a microphone coupled to the robot;

sending video signals to the communications network, the video signals being produced from a camera coupled to the robot;

rendering the video signals received from the communications network using a display device embedded in a set of goggles; and

transducing the audio signals received from the communications network using a transducer embedded in the set of goggles.

17. The method of claim 16, further comprising:

sending audio signals to the communications network from a second microphone coupled to a second robot having life-like features;

sending video signals to the communications network from a second camera coupled to the second robot;

rendering the video signals received from the communications network onto a monitor coupled to a second set of goggles; and

transducing the audio signals received from the communications network using a second transducer embedded in the second set of goggles.

18. The method of claim 16, wherein the robot includes an eye socket and the camera is positioned in the eye socket.

19. The method of claim 16, wherein the robot includes an ear canal and further comprising positioning the microphone within the ear canal.

20. The method of claim 16, wherein the set of goggles, comprises a receiver to receive the video signals.

21. The method of claim 16, wherein the robot further comprises a transmitter to wirelessly send the audio signals, the motion signals, the tactile signals and the video signals to the communications network.

Evidence Appendix

None

Related Proceedings Appendix

None